

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 July 2004 (29.07.2004)

PCT

(10) International Publication Number
WO 2004/062890 A3

(51) International Patent Classification⁷: **C09D 11/00**,
B29C 67/00, H01M 8/12, 4/88

(21) International Application Number:
PCT/GB2004/000045

(22) International Filing Date: 8 January 2004 (08.01.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0300533.7 10 January 2003 (10.01.2003) GB
0300529.5 10 January 2003 (10.01.2003) GB

(71) Applicant (for all designated States except US): **QINETIQ NANOMATERIALS LIMITED** [GB/GB]; Registered Office, 85 Buckingham Gate, London SW1E 6PD (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WRIGHT, Emma, Victoria** [GB/GB]; QinetiQ Limited, Cody Technology Park, Ively Road, Farnborough, Hampshire GU14 0LX

(GB). **GORE, Jonathan** [GB/GB]; QinetiQ Limited, Cody Technology Park, Ively Road, Farnborough, Hampshire GU14 0LX (GB). **HOOPER, Alan** [GB/GB]; QinetiQ Limited, Cody Technology Park, Ively Road, Farnborough, Hampshire GU14 0LX (GB). **WALKER, Laura, Diane** [GB/GB]; QinetiQ Limited, Cody Technology Park, Ively Road, Farnborough, Hampshire GU14 0LX (GB).

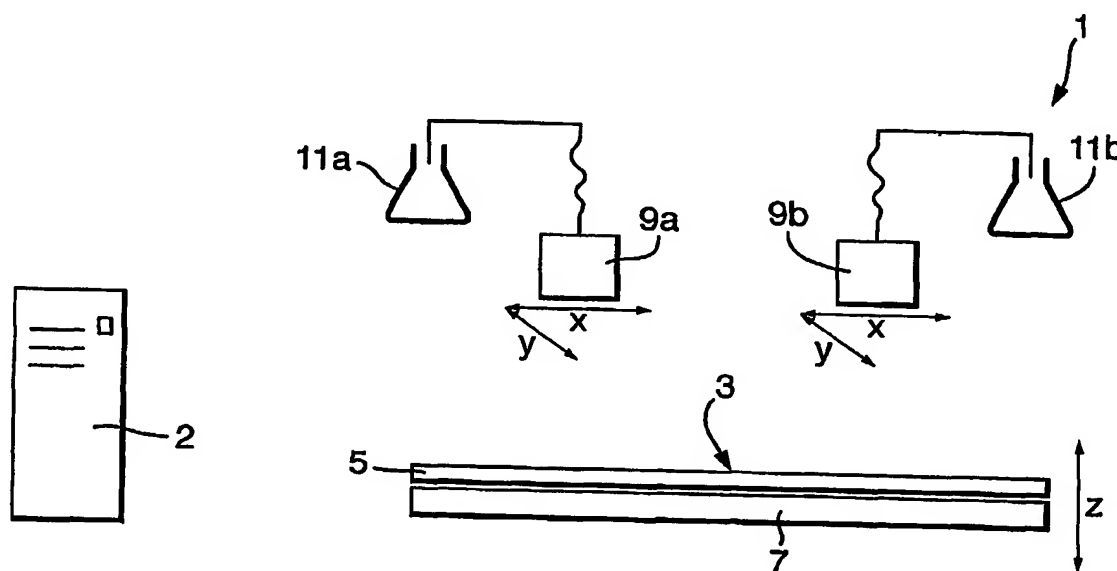
(74) Agent: **JOHNSON, I. M.**; QinetiQ Limited, IP Formalities, Cody Technology Park, A4 Building, Room G016, Ively Road, Farnborough, Hampshire GU14 0LX (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: IMPROVEMENTS IN AND RELATING TO DEPOSITED STRUCTURES



(57) Abstract: A composition, method and apparatus for ink jet deposition of structures are described. Structures which may be deposited have many advantages as a result of their small scale. This is believed to be a result of the sub-micron sized loading used in the composition. Solid Oxide Fuel Cells (SPFCs) are a particular structure which may advantageously be deposited.



Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

Declaration under Rule 4.17:

— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *with international search report*

(88) Date of publication of the international search report:
7 April 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No
/GB2004/000045

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C09D11/00 B29C67/00 H01M8/12 H01M4/88

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C09D H01M B29C B41J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00/00335 A (STANFORD RES INST INT) 6 January 2000 (2000-01-06) page 2, lines 10-15 page 18, columns 13-20 claims 1,17	1,4,6,7, 9,10,12, 13
X	US 2002/105080 A1 (SPEAKMAN STUART) 8 August 2002 (2002-08-08) paragraphs '0187!', '0231!; claims 1-23	1-4,6,13
X	EP 1 238 708 A (SEIKO EPSON CORP) 11 September 2002 (2002-09-11) paragraphs '0074!', '0075!; claims 1-12; figure 1	1,4,6,7, 9,10,13
	----- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

20 January 2005

Date of mailing of the international search report

31/01/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Reich, C

INTERNATIONAL SEARCH REPORT

International Application No

/GB2004/000045

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99/13994 A (BASHIN SUNITY ; ANNAVAJJULA DURGA (US); STANFORD RES INST INT (US); NI) 25 March 1999 (1999-03-25) page 9, paragraph 1 -----	1-15
A	WO 00/69007 A (RYBA GAIL N ; SANDIA CORP (US); BARRON CAROLE C (US); HECHT ANDREW (US) 16 November 2000 (2000-11-16) page 27, line 8 - page 28, line 2 -----	1-15

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

/GB2004/000045

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0000335	A	06-01-2000	US 5980813 A AU 4553099 A CA 2334517 A1 EP 1117518 A1 JP 2002519212 T WO 0000335 A1 US 6146716 A	09-11-1999 17-01-2000 06-01-2000 25-07-2001 02-07-2002 06-01-2000 14-11-2000
US 2002105080	A1	08-08-2002	GB 2330451 A GB 2330331 A US 2003076649 A1 US 2004151014 A1 AU 9451098 A CA 2306384 A1 EP 1027723 A2 GB 2376344 A ,B GB 2376565 A ,B GB 2376566 A ,B WO 9919900 A2 GB 2369087 A ,B	21-04-1999 21-04-1999 24-04-2003 05-08-2004 03-05-1999 22-04-1999 16-08-2000 11-12-2002 18-12-2002 18-12-2002 22-04-1999 22-05-2002
EP 1238708	A	11-09-2002	JP 2002196127 A EP 1238708 A1 CN 1400927 T WO 0232582 A1 US 2002054197 A1	10-07-2002 11-09-2002 05-03-2003 25-04-2002 09-05-2002
WO 9913994	A	25-03-1999	US 5980998 A AU 749943 B2 AU 9383498 A CA 2302252 A1 EP 1028818 A1 JP 2001516805 T WO 9913994 A1 US 6548122 B1	09-11-1999 04-07-2002 05-04-1999 25-03-1999 23-08-2000 02-10-2001 25-03-1999 15-04-2003
WO 0069007	A	16-11-2000	AU 4993200 A CA 2370899 A1 CN 1349670 T EP 1190460 A1 JP 2002544649 T WO 0069007 A1 US 2002122972 A1	21-11-2000 16-11-2000 15-05-2002 27-03-2002 24-12-2002 16-11-2000 05-09-2002